Volume 6. Surveillance

CHAPTER 2. SPECIFIC TYPES OF INSPECTIONS

SECTION 10. GROUND DEICING/ANTI-ICING INSPECTIONS

293. OBJECTIVE. Title 14 of the Code of Federal Regulations (14 CFR) part 121, section 121.629, part 125, section 125.221, and part 135, section 135.227 state that no pilot may take off an airplane when frost, ice, or snow is adhering to its wings, control surfaces, engines, or propellers. The primary objective of ground deicing/anti-icing inspections is to determine if the operator has practices and procedures in place that will meet the requirements of the applicable regulations on ground deicing/anti-icing. To fully determine that the operator has such procedures in place and is effectively using these procedures, the aviation safety inspector (ASI) will inspect specific areas of the ground deicing/anti-icing procedures. The areas required to be inspected will depend on the applicable regulations and operations specifications (OpSpecs).

295. GENERAL GROUND DEICING/ANTI-ICING INSPECTION PRACTICES AND PROCEDURES. Prior to the beginning of the deicing/anti-icing season, inspectors should become familiar with the parts 121, 125, and 135 operators' ground deicing/anti-icing plans and the airports' ground deicing/anti-icing plans. Volume 4, chapter 8, section 1, of this handbook provides background information on ground deicing/anti-icing, and the differences between part 121 and 135 procedures. Volume 4, chapter 8, section 2 contains policy, direction, and guidance on the approval of ground deicing/anti-icing procedures for parts 121 and 135. Paragraph 1749A(1) of section 2 gives the prerequisites for conducting ground deicing/anti-icing surveillance. Inspectors should follow the instructions in that paragraph and familiarize themselves with the rest of the information in these sections prior to the ground deicing/anti-icing season. It is required that inspectors complete the following two computer based instruction (CBI) courses:

A. 27010, (CBI) Parts 125/135 Ground Deicing/Anti-Icing Operations. This course provides aviation safety inspectors with the skills and knowledge needed to evaluate and approve ground de-icing and anti-icing procedures for part 125 and part 135 certificate holders.

B. 27011, (CBI) Parts 121 Ground Deicing/Anti-Icing Operations. This course provides aviation safety inspectors with the skills and knowledge needed to evaluate and approve ground de-icing and anit-icing procedures for part 121 air carriers.

297. GROUND DEICING/ANTI-ICING INSPECTION AREAS. The POI should observe the following general inspection areas to determine an operator's compliance with the ground deicing/antiicing rules.

- Flightcrew
- Maintenance and ground personnel
- Training program
- Airport deicing/anti-icing plan and secondary deicing/anti-icing areas
- Equipment
- Fluids

A. Flightcrew. Inspectors should ensure that the flightcrew is familiar with the operator's deicing/anti-icing procedures, has been trained and/or tested in the operator's procedures, and is familiar with the airport ground deicing/anti-icing plan and any remote deicing/anti-icing capabilities. Procedural areas include the following:

(1) Holdover time (when appropriate):

- Specific weather conditions
- Temperature
- Type of fluid used

(2) Procedures for communication:

- Deicing/anti-icing start time
- Documentation
- ATC coordination
- Current weather information
- Verification of deicing/anti-icing

(3) Procedures for pretakeoff check, pretakeoff contamination check, or outside the aircraft check (OTAC).

(4) Computation of latest takeoff time.

B. Maintenance and Ground Personnel. Inspectors should ensure that the maintenance and ground personnel are familiar with the operator's deicing/anti-icing program and have been trained and/or tested in the operator's procedures. Procedural areas include the following:

(1) Knowledge of aircraft manufacturer's ground deicing/anti-icing procedures:

- Knowledge of deicing/anti-icing methods and equipment
- Knowledge of pretakeoff check, pretakeoff contamination check, or OTAC

(2) Holdover time (when appropriate):

- Specific weather conditions
- Temperature
- Type of fluid used

(3) Cockpit Communications:

- Type of fluid being used
- Deicing/anti-icing start time
- Confirmation that deicing/anti-icing is complete and the airplane is clean

C. Operator's Ground Deicing/Anti-Icing Training Program. Inspectors should ensure that the operator has approved training procedures in place that have met the training and/or testing requirements of the applicable regulations. These procedures should ensure that all personnel involved in airplane ground deicing/anti-icing are knowledgeable of their duties and responsibilities.

(1) *Records.* Inspectors must ensure that the operator has a recordkeeping system in place to verify that all personnel have been properly trained in the operator's procedures. Records should include the following:

- Types of training (including initial and recurrent)
- Dates of training received

(2) Training for pretakeoff check, pretakeoff contamination check, and/or OTAC.

D. Airport Deicing/Anti-Icing Plan and Secondary Deicing/Anti-Icing Areas. If an airport deicing/anti-icing plan has been developed, then the inspectors should have a general knowledge of this plan and any secondary deicing/anti-icing areas.

(1) *Deicing/Anti-Icing Control Center.* Many airports have developed command centers that control the movement of aircraft, the allocation of slot times, the location of remote deicing/anti-icing, and runway snow removal. The inspector should become familiar with the planned procedures prior to the deicing/antiicing season.

E. Equipment. Inspectors should have a general level of knowledge of the deicing/anti-icing equipment.

F. Fluids. Inspectors should be familiar with the types of fluids used for deicing/anti-icing.

(1) Type I Applications:

- Performance characteristics
- Mix ratio
- Temperature

(2) Types II and IVApplications:

- Performance characteristics
- Mix ratio
- Temperature
- Airplane rotation speed

(3) Storage Requirements.

299. SPECIFIC GROUND DEICING/ANTI-ICING INSPECTION PRACTICES AND PROCEDURES.

A. Operator Procedures. Surveillance of the operator's procedures should clearly show the 14 CFR part that is being used to meet the ground deicing/anti-icing rule. Recall that an operator may have several options under parts 121, 125, or 135, as applicable, to meet the requirements of the rule. These options are discussed in volume 4, chapter 8, sections 1 and 2.

(1) *Crewmember Training.* Crewmember training must meet the requirements of the rule and the approval process discussed in volume 4, chapter 8, section 2.

(2) *Inclusions in Crewmember Training.* Crewmember Training should include at least the following information:

- The use of holdover times and tables when using deicing/anti-icing fluids (These holdover times are only advisory in part 135 operations and will only guide the pilot as to what contamination to expect when conducting the pretakeoff contamination check.)
- Airplane deicing/anti-icing procedures; inspection and check procedures, to include responsibilities and requirements for the pretakeoff contamination check, the OTAC, or the alternative procedures as applicable
- Communications with all personnel or agencies involved in the deicing/anti-icing process and the decision making process
- Airplane surface contamination, to include adherence of frost, ice, or snow and critical area location and identification; knowledge of how small amounts of surface contamination adversely affects airplane performance and flight characteristics
- Types and characteristics of deicing/anti-icing fluids, if fluids are used by the certificate holder

NOTE: It is important that flightcrews do not use deicing/anti-icing fluids unless they have been trained in characteristics and effects of these fluids on their operation.

- Cold weather preflight inspection procedures
- Techniques for recognizing contamination on the airplane (This aspect of training should cover both preflight inspection and pretakeoff contamination check.)

NOTE: All training should be airplane specific. When an operator has different kinds of airplanes, the training should cover any unique characteristics of these airplanes while operating in ground icing conditions.

B. Program Tracking and Reporting Subsystem (PTRS). Several examples of the correct entries to use on the PTRS Data Sheet are included in the CBI training course 27010, Parts 125/135 Ground Deicing/Anti-Icing Operations.

(1) Correct PTRS entries for deicing/anti-icing surveillance are as follows:

Operations 1637
Maintenance 3625
Avionics 5625

(2) All deicing/anti-icing surveillance activities require that the word "ICE" be written in the "National Use" block. This is especially important in a surveillance situation when an inspector is conducting a separate activity and observes deicing/anti-icing during that surveillance. See FAA Order 8400.10, Air Tranpsortation Operations Inspector's Handbook for further guidance regarding PTRS, including Figure 4.8.2.1, Guide for Completing PTRS Data Entry.

300. - 314. RESERVED.

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